Distr.
GENERAL

A/CONF.172/5/Add.4
20 April 1994

Original: ENGLISH

Item 10 (f) of the provisional agenda*

# NATURAL DISASTER REDUCTION: WARNING SYSTEMS

## Technical session

## Addendum

## Flood and landslide warning systems

Summary of presentation by Professor Dr. Robert C. Sheets, Director, Hydrological and Geological Survey, Switzerland; Dr. Manfred Spreafico, Head of the Hydrology Division, Hydrological and Geological Survey, Switzerland; and Dr. Olivier Lateltin, Secretary, National Committee for the International Decade on Natural Disaster Reduction, Switzerland

1. Flood and landslide warning systems play a key role in emergency preparedness. According to the great variation in meteorological, hydrological, geological, topographical and morphological settings in flood and landslide endangered zones and the different infrastructures existing within these zones, many different systems exist throughout the world.

2. Different types of monitoring and warning systems have been in operation in Switzerland for many years. Within the framework of the International Decade for Natural Disaster Reduction and in close cooperation with the World Meteorological Organization (WMO), which has the international leadership in this field, these activities have been reinforced.

---

* A/CONF.172/1

GE.94-01529 (E)

3. Case studies of some selected flood and landslide warning systems which are in operation in Switzerland, are briefly described in the presentation. These include:

(a) A discharge forecast system for a large basin based on quantitative rainfall forecasts and rainfall-runoff modelling;

(b) A flood warning system based on automatic water level and discharge measurements;

(c) A system of forecasting the inflow in a regulated lake with the aim of pre-emptying the lake to gain flood-retention volume;

(d) A warning system indicating the failure of the dam of an artificial reservoir;

(e) A monitoring and warning system in a narrow alpine valley endangered by massive rockfalls (network of geodetic, meteorological and seismic stations).

4. The effectiveness of these systems will be the basis for a discussion on general problems associated with the implementation and operation of warning systems related to data collection, forecasting, warning dissemination, coordination, land-use planning and responsibilities in a decentralized country where disaster prevention and management are mainly in the hands of regional authorities.

- - - - -